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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,915	08/20/2003	Hiroyuki Sato	11-193	4777

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POSZ LAW GROUP, PLC
12040 SOUTH LAKES DRIVE
SUITE 101
RESTON, VA 20191

EXAMINER

THOMAS, SHANE M

ART UNIT

PAPER NUMBER

2186

DATE MAILED: 12/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/643,915	SATO, HIROYUKI	
	Examiner	Art Unit	
	Shane M. Thomas	2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 August 2003 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office action is responsive to the application filed 8/20/2003. Claims 1-7 are presented for examination and are currently pending.

The examiner requests, in response to this Office action, any reference(s) known to qualify as prior art under 35 U.S.C. sections 102 or 103 with respect to the invention as defined by the independent and dependent claims. That is, any prior art (including any products for sale) similar to the claimed invention that could reasonably be used in a 102 or 103 rejection. This request does not require applicant to perform a search. This request is not intended to interfere with or go beyond that required under 37 C.F.R. 1.56 or 1.105.

The request may be fulfilled by asking the attorney(s) of record handling prosecution and the inventor(s)/assignee for references qualifying as prior art. A simple statement that the query has been made and no prior art found is sufficient to fulfill the request. Otherwise, the fee and certification requirements of 37 CFR section 1.97 are waived for those documents submitted in reply to this request. This waiver extends only to those documents within the scope of this request that are included in the application's first complete communication responding to this requirement. Any supplemental replies subsequent to the first communication responding to this request and any information disclosures beyond the scope of this are subject to the fee and certification requirements of 37 CFR section 1.97.

In the event prior art documentation is submitted, a discussion of relevant passages, figs. etc. with respect to the claims is requested. The examiner is looking for specific references to 102/103 prior art that identify independent and dependent claim limitations. Since applicant is

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most knowledgeable of the present invention and submitted art, his/her discussion of the reference(s) with respect to the instant claims is essential. **A response to this inquiry is greatly appreciated.**

The examiner also requests, in response to this Office action, that support be shown for language added to any original claims on amendment and any new claims. That is, indicate support for newly added claim language by specifically pointing to page(s) and line no(s). in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy was filed as part of the original disclosure on 8/20/2003.

Specification

The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

As written, claims 1-7 invoke 35 U.S.C. 112, sixth paragraph. If the Applicant does not wish the claim limitation to be subject to this provision, claims 1-7 should be amended accordingly. See MPEP §2181.

Claim Objections

Claims 2,4, and 7 are objected to because of the following informalities:

The Examiner requests colons to be placed after the term “comprising” in line 2 of the claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 6, it is not clear whether the term “date/time” indicates “date *and* time” or “date *or* time.” Nonetheless, for the purposes of examination, the Examiner, using a broadest reasonable interpretation, has interpreted the term as “date *or* time.” Clarification is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Komatsu et al. (U.S. Patent No. 5,802,551).

As per claim 1, Komatsu teaches a portable information terminal 20 equipped with a flash memory 25 (figure 1), which includes a data storage region (i.e. the collection of all of the data portions of each flash sector - refer to figure 3) and a directory region (i.e. the collection of all of the erase flags for each sector - figure 3). Komatsu teaches a means for setting a memory optimization order instruction execution of optimization for the flash memory (i.e. the evacuation procedure for gaining free flash space - figures 5-10). The optimization processing includes deletion of data stored in a designated area (sectors whose erase flag is set) of the data storage region. These sectors correspond to information indicating old data that is to be deleted, stored in the directory region (corresponding erase flag is set - column 4, lines 31-34). This process restores the designated data of the data storing region as available storage regions, which are then written with valid data (column 8, lines 12-14).

Further Komatsu teaches in column 13, lines 40-46, a means for executing the optimization processing (evacuation process) for the flash memory according to said memory optimization order (i.e. the command to begin evacuation that is executed when the system determines that evacuation should occur to free memory sectors of the flash 25 memory) in

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response to stop of electric power supply to the portable information terminal 20. Column 13, lines 40-46 state that the evacuation process (shown in figures 12) is executed at a resumed point if the event of power loss occurs to the portable information terminal 20. Thus it can be seen that in response to the loss of power, the memory optimization (evacuation process) is executed (once power is restored) to resume operation at the state before the stop of power.

As per claim 2, Komatsu teaches in column 13, lines 40-46, a means for selectively determining whether or not the optimization processing for the flash memory should be executed in response to the stop of the electric power supply to the portable information terminal in that if the host computer (refer to figure 1) determines that the memory optimization processing (evacuation process) has stopped at the given point in the processing (evidenced by data but no erasable sectors in the backup area), the host computer selectively determines to [continue] performing the memory optimization (evacuation process of figures 12) by the restart of the evacuation process. Conversely, it can be seen that if the previous conditions had *not* been met (i.e. that data was present but no erasable sectors in the backup area) that the host computer would selectively determine *not* to execute the memory optimization (evacuation) process.

Further, Komatsu teaches that the optimization size of the flash memory can be adjusted as specific blocks may be used for evacuation or backup purposes instead of free blocks for incoming data (refer to figure 12A - 12R). Using these specific blocks for other purposes rather than incoming write data thereby decreased the optimization size of the flash memory (i.e. reduces the number of free blocks that can be used to store incoming write data).

As per claim 3, Komatsu teaches a portable information terminal 20 equipped with a flash memory 25 (figure 1), which includes a data storage region (i.e. the collection of all of the data portions of each flash sector - refer to figure 3) and a directory region (i.e. the collection of all of the erase flags for each sector - figure 3). Komatsu teaches a means for setting a memory optimization order instruction execution of optimization for the flash memory (i.e. the evacuation procedure for gaining free flash space - figures 5-10). The optimization processing includes deletion of data stored in a designated area (sectors whose erase flag is set) of the data storage region. These sectors correspond to information indicating old data that is to be deleted, stored in the directory region (corresponding erase flag is set - column 4, lines 31-34). This process restores the designated data of the data storing region as available storage regions, which are then written with valid data (column 8, lines 12-14).

Komatsu also teaches a means for executing the optimization processing (evacuation process) for the flash memory according to the memory optimization order (i.e. request to begin evacuation processing) in response to execution of a specific statement (incoming data block to be stored) incorporated in an application program (i.e. the writing and reading code used for accessing the terminal 20 that is executed by the processor 22 to access the data - column 3, lines 35-42) used in said portable information terminal 20 as taught in column 8, lines 31-33.

As per claim 4, Komatsu teaches a means for selectively determining whether or not said optimization processing for the flash memory (i.e. evacuation process) should be executed in response to the execution of said specific statement (i.e. write command from host) in column 8, lines 31-33. Specifically, Komatsu teaches based on the number of free sectors whether or not the evacuation process is to occur. As discussed in the example of column 8, lines 1 - 65, if a

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write process for data from the host occurs and the number of free blocks remaining in the flash is greater than two (column 8, lines 4-11), than the optimization processing (evacuation process) selectively does not occur; however, if the number of remaining blocks is two (column 8, lines 31-33), then the optimization processing is selected to occur.

Further, Komatsu teaches a means for setting execution timing of the optimization (evacuation process) for the flash memory to a predetermined point of time later than the execution of the specific statement (write instruction) with respect to column 8, lines 4-6, and column 12, lines 55-57. Komatsu teaches that instead of a executing a write request and then checking whether or not the number of free sectors is two (which triggers the evacuation process) (column 8, lines 4-6), execution of the evacuation process can be changed to a predetermined time (when no free blocks are remaining instead of two - column 12, lines 55-57) later than the execution of the specific write command that would execute the evaluation process. In other words, the write request resulting in no remaining free blocks would trigger the evacuation processes, which is a predetermined point of time (i.e. two write instructions later) later than the write request resulting in two remaining free blocks.

Still further, Komatsu teaches that the optimization size of the flash memory can be adjusted as specific blocks may be used for evacuation or backup purposes instead of free blocks for incoming data (refer to figure 12A - 12R). Using these specific blocks for other purposes rather than incoming write data thereby decreased the optimization size of the flash memory (i.e. reduces the number of free blocks that can be used to store incoming write data).

As per claim 5, as discussed above with respect to the rejections of claims 3 and 4, the specific statement is a statement of receiving a file (sector of data) from host (figure 1) for

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writing the sector of data in to the flash. Column 8, lines 31-33, of Komatsu teaches that the optimization process begins after the write to the flash, which results in only two sectors now being free.

As per claim 6, the rejection of lines 1-9 follows the rejection of lines 1-9 of claim 3. Komatsu teaches a means for executing said optimization processing (evacuation process) for the flash memory according to the memory optimization order (i.e. the instruction to begin evacuation processing) at a designated time (i.e. the time in which only two remaining sectors are free - column 8, lines 31-33). At the point in time when only two sectors are free, the system of Komatsu begins evacuation processing in order to free up erasable sectors for future write requests.

As per claim 7, as discussed in the rejection of claim 4, Komatsu teaches a means for selectively setting the time for executing the optimization processing (evacuation process) for the flash memory to when only a predetermined number of free sectors remain. In column 8, lines 31-33, Komatsu teaches optimization processing when only two free sectors remain, while teaching selectively setting the optimization processing to start when no free sectors remain in column 12, lines 55-57. Refer also to figures 10 and 12.

Komatsu teaches that the optimization size of the flash memory can be adjusted as specific blocks may be used for evacuation or backup purposes instead of free blocks for incoming data (refer to figure 12A - 12R). Using these specific blocks for other purposes rather than incoming write data thereby decreased the optimization size of the flash memory (i.e. reduces the number of free blocks that can be used to store incoming write data).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Taussig et al. (U.S. Patent Application Publication No. 2002/0184459) teaches a method in figure 4 for temporarily storing picture data in a temporary memory (that may be flash memory) and erasing the data in response to a user's erase request. Further, the data in the temporary memory is stored into permanent memory if a predetermined time limit is reached (step 110) or the power has been turned off (step 114).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane M Thomas whose telephone number is (571) 272-4188. The examiner can normally be reached M-F 8:30 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matt M Kim can be reached at (571) 272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shane M. Thomas



HONG CHONG KIM
PRIMARY EXAMINER